

### Claims

I claim:

5                   1.       Apparatus for protecting a patient's limb from tourniquet-related injury, comprising:

                  a tourniquet cuff having a length sufficient for encircling a limb protection sleeve applied to a limb at a location having a limb circumference of not less than a predetermined minimum limb circumference and not more than a predetermined maximum limb circumference;

                  limb protection sleeve adapted for applying to the limb at the location, wherein the sleeve has a tubular shape and a tubular circumference predetermined to be less than the predetermined minimum and wherein the sleeve is formed to allow elastic stretching of the tubular shape sufficient to increase the tubular circumference to be substantially equivalent to the limb circumference at the location when the sleeve is applied to the limb, thereby applying a pressure to the limb that is greater than a predetermined minimum pressure and less than a predetermined maximum pressure; and

                  identification means perceptible to a user for providing an indication to the user of the predetermined minimum limb circumference and the predetermined maximum limb circumference.

                  2.       The apparatus described in claim 1 wherein the identification means comprises a selected color visible on the cuff and the same selected color visible on the sleeve.

                  3.       The apparatus described in claim 1 wherein the identification means comprises a marking visible on the sleeve.

4. The apparatus described in claim 1 wherein the identification means comprises a sealed package containing both the sleeve and the cuff.

5. The apparatus described in claim 1 wherein the tourniquet cuff is inflatable and including a tourniquet instrument for supplying gas to the inflatable tourniquet cuff at a pressure sufficient to stop blood flow in the encircled limb.

6. Apparatus for protecting a patient's limb from tourniquet-related injury, comprising:

a tourniquet cuff having a length sufficient for encircling a limb having a limb circumference within a range of not less than a predetermined minimum and not more than a predetermined maximum, and wherein the cuff has a first indicium thereon that is indicative of that range;

a stretchable limb protection sleeve having a tubular shape and an unstretched circumference that is less than the predetermined minimum, wherein the sleeve is formed to apply a pressure to a limb having a circumference within the range that is greater than a predetermined minimum pressure and less than a predetermined maximum pressure; and

matching means perceptible to a user for matching the sleeve to the first indicium of the cuff.

7. The apparatus of claim 6 wherein the matching means includes a second indicium on the sleeve that corresponds to the first indicium on the cuff.

TOP SECRET - CONFIDENTIAL

8. The apparatus of claim 7 wherein the sleeve is comprised of two layers, with one layer folded over another layer at a fold edge and so that the edges of the layers away from the fold edge are sewn together at a sewn edge of the sleeve.

9. The apparatus of claim 8 wherein the second indicium is incorporated into the sewn edge of the sleeve.

10. The apparatus of claim 6 wherein the cuff has a predetermined width and forms a generally cylindrical shape when encircling the limb, and whereby the sleeve is sized to be substantially wider than the cuff thereby to enable part of the sleeve to underlie the cuff around the limb while another part of the sleeve is folded over the cuff when the cuff encircles the limb.

11. The apparatus of claim 6 further comprising an instrument attached to the cuff for pressurizing the cuff.

12. The apparatus of claim 7 wherein the first indicium and the second indicium are the same color.

13. A tourniquet cuff and sleeve system comprising:  
a tourniquet cuff having a width, a length, and a fastening mechanism, the cuff being flexible for being lapped upon itself into a cylindrical configuration having one of a range of circumferences and within which range the fastening mechanism completely engages to secure the cuff in the cylindrical configuration;

a tubular stretchable sleeve of uniform thickness and having an unstretched circumference that is smaller than the range of cuff circumferences, wherein the sleeve is formed to apply a pressure to a limb having a circumference within the range that is

greater than a predetermined minimum pressure and less than a predetermined maximum pressure; and wherein

the sleeve has a width that is greater than the width of the cuff thereby to enable part of the sleeve to completely underlie the cuff when the cuff is in the cylindrical configuration while another part of the sleeve is folded over the cuff; and

matching means for providing a visual indication of a size correspondence between the cuff and sleeve.

14. A tourniquet cuff and sleeve system comprising:

a tourniquet cuff having a width, a length and a fastening mechanism, the cuff being flexible for being lapped upon itself into a cylindrical configuration to surround a limb;

a tourniquet instrument attached to the cuff for providing pressure to the cuff for stopping blood flow through the surrounded limb;

a tubular stretchable sleeve of uniform thickness and having an unstretched circumference that is smaller than the limb circumference, wherein the sleeve is formed to apply a pressure to a limb having a circumference within the range that is greater than a predetermined minimum pressure and less than a predetermined maximum pressure; and wherein

the sleeve is configured to underlie the cuff on the limb.

15. A method for correlating one size of a number of different-sized stretchable sleeves with a particularly sized tourniquet cuff that surrounds a limb of a predetermined circumference, comprising the steps of:

selecting a sleeve that has an unstretched circumference that is smaller than the limb circumference and that applies to the limb a pressure that is greater than a first

predetermined amount and less than a second predetermined amount when the sleeve surrounds the limb; and

marking the selected sleeve in a manner to show correlation with the cuff.

5           16.     The method of claim 15 wherein the selecting step includes the step of establishing the first predetermined amount to be 2 mmHg.

          17.     The method of claim 15 wherein, in lieu of the marking step, the method includes the step of packaging together the correlated cuff and sleeve.

10           18.     Apparatus for protecting a patient's limb from tourniquet-related injury, comprising:

          a tourniquet cuff having a length sufficient for encircling a limb having a limb circumference within a range of not less than a predetermined minimum and not more than a predetermined maximum, and wherein the cuff has a first indicium thereon that is  
15   indicative of that range;

          a stretchable limb protection sleeve having a tubular shape and an unstretched circumference that is less than the predetermined minimum; and

          matching means carried on the sleeve and perceptible to a user for matching the sleeve to the first indicium of the cuff.